Attorney Docket No.: 09/750,717

## IN THE CLAIMS:

Please replace pending claims 1, 38, 55, 58, 61, 64, 74, 77, 80, 83, 86, and 89 with amended claims 1, 38, 55, 58, 61, 64, 74, 77, 80, 83, 86, and 89 as follows (a marked-up copy of changes is found in the Appendix of the present amendment):

1. (Amended) A composition for oxidation dyeing keratin fibres comprising, in an appropriate dyeing medium, (1) at least one oxidation dye, (2) at least one cyclohomopolymer of dialkyldiallylammonium comprising, as a constituent of the chain, at least one unit of structure (VI):

(VI)

$$-(CH_2)_t(R_{12})C$$
  $(CH_2)_k$   $C(R_{12})(CH_2) CH_2$   $CH_2$   $CH_2$ 

wherein:

- k and t are each chosen from 0 and 1, with the proviso that the sum of k + t is equal to 1;
- R<sub>12</sub>, which may be identical or different, are each chosen from hydrogen atoms and methyl groups;

Chil

B

FINNEGAN, HENDERSON, FARABOW, CARRETT, & DUNNER, L. L. P. 1300 I STREET, N. W.

LAW OFFICES

WASHINGTON, DC 20005 202-408-4000

Attorney Docket No.: 09/750,717

-  $R_{10}$  and  $R_{11}$ , which may be identical or different, are each chosen from alkyl groups comprising from 1 to 22 carbon atoms, hydroxyalkyl groups, and  $C_1$ - $C_4$  amidoalkyl groups;

- R<sub>10</sub> and R<sub>11</sub>, together with the nitrogen atom to which they are commonly bonded, may additionally form at least one heterocyclic group;
- Y is an anion; and
- (3) at least one quaternary polyammonium polymer chosen from:
- (i) polymers comprising repeating units of formula (a):

$$\begin{pmatrix}
R_{1} & R_{3} \\
 & | & | \\
 & N^{+}(CH_{2})_{n} & \longrightarrow N^{+}(CH_{2})_{p} & \longrightarrow \\
 & | & X^{-} & | & X^{-} \\
 & R_{2} & R_{4}
\end{pmatrix} (CH_{2})_{p} - \dots (a)$$

wherein:

- R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 4 carbon atoms and hydroxyalkyl groups comprising from 1 to 4 carbon atoms;
- n and p, which may be identical or different, are each chosen from integers ranging from 2 to 20; and
- X<sup>-</sup> is an anion chosen from anions derived from inorganic acids and anions derived from organic acids; and
- (ii) polyquaternary ammonium polymers comprising repeating units of formula (VIII):

FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L. L. P. 1300 I STREET, N. W.

LAW OFFICES

WASHINGTON, DC 20005 202-408-4000



S. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

(VIII)

wherein:

- p is an integer ranging from 1 to 6,
- D is/chosen from direct bonds and –(CH<sub>2</sub>)<sub>r</sub>-CO- groups, wherein r is a number equal to 4 or 7, and
- is an anion chosen from anions derived from inorganic acids and anions derived from organic acids.

GM 2

38. (Amended) A ready-to-use cosmetic composition for oxidation dyeing keratin fibers, wherein said ready-to-use cosmetic composition is obtained by including at least one dyeing composition (A) in a dyeing medium, comprising:

- at least one oxidation dye,
- at least one cyclehomopolymer of dialkyldiallylammonium comprising, as a constituent of the chain, at least one unit of structure (VI):

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

Attorney Docket No.: 09/750,717

$$(CH_2)_t(R_{12})C$$
 $(CH_2)_k$ 
 $C(R_{12})(CH_2)$ 
 $(VI)$ 
 $(VI)$ 
 $CH_2$ 
 $CH_2$ 

wherein:

- k and t are each chosen from 0 and 1, with the proviso that the sum of k + t is equal to 1;
- R<sub>12</sub>, which may be identical or different, are each chosen from hydrogen atoms and methyl groups;
- R<sub>10</sub> and R<sub>11</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 22 carbon atoms, hydroxyalkyl groups, and C<sub>1</sub>-C<sub>4</sub> amidoalkyl groups;
- R<sub>10</sub> and R<sub>11</sub>, together with the nitrogen atom to which they are commonly bonded, may additionally form at least one heterocyclic group;
- Y is an anion; and
  - at least one quaternary\polyammonium polymer chosen from:
- (i) polymers comprising repeating units of formula (a):

LAW OFFICE

FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L. L. P. 1300 I STREET, N. W. WASHINGTON, DC 20005 202-408-4000

O.S. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

wherein:

- R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 4 carbon atoms and hydroxyalkyl groups comprising from 1 to 4 carbon atoms;
- n and p, which may be identical or different, are each chosen from integers ranging from 2 to 20 and
- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids; and
- (ii) polyquaternary ammonium polymers comprising repeating units of formula (VIII):

wherein:

- p is an integer ranging from 1 to 6,

A2

LAW OFFICES

FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L. L. P. 1300 I STREET, N. W. WASHINGTON, DC 20005 202-408-4000

O.S. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

- D is chosen from direct bonds and –(CH<sub>2</sub>)<sub>r</sub>-CO- groups, wherein r is a number equal to 4 or 7, and

- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids, with at least one oxidizing composition (B) comprising at least one oxidizing agent.

Syl

55. (Amended)

A method for oxidation dyeing keratin fibers comprising:

(a) applying to said keratin fibers at least one dyeing composition (A) comprising, in a dyeing medium:

- at least one oxidation dye, and

- a combination comprising:

(VI)

- (I) at least one cyclohomopolymer of dialkyldiallylammonium comprising, as a constituent of the chain, at least one unit of structure (VI):

M3

-(CH<sub>2</sub>)<sub>t</sub>(R<sub>12</sub>)C (CH<sub>2</sub>)<sub>k</sub> C(R<sub>12</sub>)(CH<sub>2</sub>)-H<sub>2</sub>C CH<sub>2</sub>

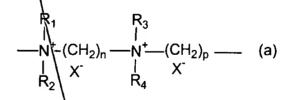
LAW OFFICES

FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L. L. P. 1300 I STREET, N. W. WASHINGTON, DC 20005 202-408-4000

wherein:

- k and t are each chosen from 0 and 1, with the proviso that the sum of k + t is equal to 1;

- R<sub>12</sub>, which may be identical or different, are each chosen from hydrogen atoms and methyl groups;
- R<sub>10</sub> and R<sub>11</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 22 carbon atoms, hydroxyalkyl groups, and C<sub>1</sub>-C<sub>4</sub> amidoalkyl groups;
- R<sub>10</sub> and R<sub>11</sub>, together with the nitrogen atom to which they are commonly bonded, may additionally form at least one heterocyclic group;
- Y⁻ is an anion; and
  - (II) at least\one quaternary polyammonium polymer chosen from:
- (i) polymers comprising repleating units of formula (a):



wherein:

- R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 4 carbon atoms and hydroxyalkyl groups comprising from 1 to 4 carbon atoms;

B3

LAW OFFICES
FINNECAN, HENDERSON,
FARABOW, GARRETT,
8 DUNNER, L. L. P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

O.S. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

- n and p, which may be identical or different, are each chosen from integers ranging from 2 to 20; and

- X<sup>-</sup> is an anion chosen from anions derived from inorganic acids and anions derived from organic acids; and

(ii) polyquaternary ammonium polymers comprising repeating units of formula (VIII):

wherein:

- p is an integer ranging from 1 to 6,

- D is chosen from direct bonds and –(CH<sub>2</sub>)<sub>r</sub>-CO- groups, wherein r is a number equal to 4 or 7, and

- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids, and

(b) developing the color with the aid of at least one oxidizing composition (B) comprising at least one oxidizing agent, wherein said at least one oxidizing composition (B) is combined at the time of use with said at least one dyeing composition (A) or said at

**3** 

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L. L. P.
1300 1 STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

5.S. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

B0

least one oxidizing composition (B) is applied sequentially to said at least one dyeing composition (A) without intermediate rinsing.

58. (Amended)

A method for oxidation dyeing keratin fibers comprising:

- (a) applying to said keratin fibers at least one dyeing composition (A) comprising, in a dyeing medium:
  - at least one oxidation dye, and
  - a combination comprising:
- (I) at least one cyclohomopolymer of dialkyldiallylammonium comprising, as a constituent of the chain at least one unit of structure (VI):

 $(CH_2)_k$   $-(CH_2)_t(R_{12})C$   $C(R_{12})(CH_2) CH_2$   $CH_2$   $CH_2$  $CH_2$ 

wherejh:

- k and t are each chosen from 0 and 1, with the proviso that the sum of k + t is equal to 1;
- R<sub>12</sub>, which may be identical or different, are each chosen from hydrogen atoms and methyl groups;

FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L. L.P. 1300 I STREET, N. W. WASHINGTON, DC 20005 202-408-4000

6:S. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

- R<sub>10</sub> and R<sub>1</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 22 carbon atoms, hydroxyalkyl groups, and C<sub>1</sub>-C<sub>4</sub> amidoalkyl groups;

- $R_{10}$  and  $R_{11}$ , together with the nitrogen atom to which they are commonly bonded, may additionally form at least one heterocyclic group;
- Y is an anion; and
  - (II) at least one quaternary polyammonium polymer chosen from:
  - (i) polymers comprising repeating units of formula (a):

$$\begin{array}{c|ccccc}
 & R_{3} & R_{3} \\
 & & I & CH_{2} & CH_{2}$$

wherein:

- R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 4 carbon atoms and hydroxyalkyl groups comprising from 1 to 4 carbon atoms;
- n and p, which may be identical or different, are each chosen from integers ranging from 2 to 20; and

**1**4

FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L. L. P. 1300 1 STREET, N. W. WASHINGTON, DC 20005

202-408-4000

es.

S. Application No.: 09/750,717

Attorney Docket No.: 05725.0826-00

- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids; and

(ii) polyquaternary ammonium polymers comprising repeating units of formula (VIII):

(VIII)

wherein:

- p is an integer kanging from 1 to 6,

- D is chosen from direct bonds and –(CH<sub>2</sub>)<sub>r</sub>-CO- groups, wherein r is a number equal to 4 or 7, and

- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids, and

(b) developing the color with the aid of at least one oxidizing composition (B) comprising:

- at least one oxidizing agent, and
- a combination comprising at least one cyclohomopolymer of dialkyldiallylammonium as defined above and at least one other quaternary polyammonium as defined above,

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, CARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005

202-408-4000

O.S. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

Bta

- wherein said at least one oxidizing composition (B) is combined at the time of use with said at least one dyeing composition (A) or said at least one oxidizing composition (B) is applied sequentially to said at least one dyeing composition (A) without intermediate rinsing.

GMg

61. (Amended) A method for oxidation dyeing keratin fibers comprising:

- applying to said keratin fibers at least one dyeing composition (A) comprising, in a dyeing medium, at least one oxidation dye,
- developing the color with the aid of at least one oxidizing composition (B) comprising at least one oxidizing agent,
  - wherein said oxidizing composition (B) comprises a combination comprising:
- (I) at least one cyclohomopolymer of dialkyldiallylammonium comprising, as a constituent of the chain, at least one unit of structure (VI):

(VI)  $\begin{array}{c|c} -(CH_2)_t(R_{12})C & (CH_2)_k \\ -(CH_2)_t(R_{12})C & C(R_{12})(CH_2) - \\ -(CH_2)_t(R_{12})C & C(R_12)(CH_2) - \\ -(CH_2)_t(R_12)_t(R_12)C & C(R_12)_t(R_12)_t(R_12)_t(R_12)_t(R_12)_t(R_12)_t(R_12)_t(R_12)_t(R_12)_t(R_12)_t(R_12)_t(R_12)_t(R_12)_t(R_12)_t(R_12)_t(R_12)_t$ 

wherein:

- k and t are each chosen from 0 and 1, with the proviso that the sum of k + t is equal to

FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L. L. P. 1300 I STREET, N. W.

LAW OFFICES

WASHINGTON, DC 20005 202-408-4000

N, 1;

- R<sub>12</sub>, which may be identical or different, are each chosen from hydrogen atoms and methyl groups;

- R<sub>10</sub> and R<sub>11</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 22 carbon atoms, hydroxyalkyl groups, and C<sub>1</sub>-C<sub>4</sub> amidoalkyl groups;

-  $R_{10}$  and  $R_{11}$ , together with the nitrogen atom to which they are commonly bonded, may additionally form at least one heterocyclic group;

- Y is an anion; and

- (II) at least one quaternary polyammonium polymer chosen from:

(i) polymers comprising repeating units of formula (a):

$$\begin{array}{c|ccccc}
R_1 & R_3 \\
 & \downarrow & \downarrow \\
 & N^{+}(CH_2)_{\overline{n}} & N^{+}(CH_2)_{p} & --- & (a) \\
 & \downarrow & \downarrow & \downarrow & X^{-} \\
 & R_2 & X^{-} & R_4 & X^{-}
\end{array}$$

wherein:

- R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 4 carbon atoms;

- n and p, which may be identical or different, are each chosen from integers ranging from 2 to 20; and

05

LAW OFFICES
FINNECAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L. L. P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids; and

(ii) polyquaternary ammonium polymers comprising repeating units of formula (VIII):

(VIII)

wherein:

- p is an integer ranging from 1 to 6,

- D is chosen from direct bonds and –(CH<sub>2</sub>)<sub>r</sub>-CO- groups, wherein r is a number equal to 4 or 7, and

- X<sup>-</sup> is an anion chosen from anions derived from inorganic acids and anions derived from organic acids,

- wherein said at least one oxidizing composition (B) is combined at the time of use with said at least one dyeing composition (A) or wherein said at least one oxidizing composition (B) is applied sequentially to said at least one dyeing composition (A) without intermediate rinsing.

FINE OF THE STATE OF THE STATE

64. (Amended) A kit for dyeing keratin fibers comprising at least two compartments, wherein:

Attorney Docket No.: 09/750,717

- a first compartment comprises at least one oxidation dye and a combination comprising:

(I) at least one cyclohomopolymer of dialkyldiallylammonium comprising, as a constituent of the chain, at least one unit of structure (VI):

(VI) 
$$-(CH_2)_t(R_{12})C - (CH_2)_k - (CH_2)_t(R_{12})C - (CH_2)_k - (CH_2)_t(R_{12})C - (CH_2)_t - (CH_2)_t(R_{12})C - (CH_2)_t -$$

wherein:

- k and t are each chosen/from 0 and 1, with the proviso that the sum of k + t is equal to 1;

- R<sub>12</sub>, which may be identical or different, are each chosen from hydrogen atoms and methyl groups;

- R<sub>10</sub> and R<sub>11</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 22 carbon atoms, hydroxyalkyl groups, and C<sub>1</sub>-C<sub>4</sub> amidoalkyl groups;

-  $R_{10}$  and  $R_{11}$ , together with the nitrogen atom to which they are commonly bonded, may additionally form at least one heterocyclic group;

- Y is an anion; and

FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L. L. P. 1300 I STREET, N. W. WASHINGTON, DC 20005

202-408-4000

LAW OFFICES

- (II)at least one quaternary polyammonium polymer chosen from:
  - (i) polymers comprising repeating units of formula (a):

wherein:

- R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 4 carbon atoms and hydroxyalkyl groups comprising from 1 to 4 carbon atoms;
- n and p, which may be identical or different, are each chosen from integers ranging from 2 to 20; and
- X is an anion chosen from anions derived from inorganic acids and anions derived from organic\acids; and
- (ii) polyquaternary ammonium polymers comprising repeating units of formula (VIII):

(VIII)

FINNEGAN, HENDERSON, FARABOW, GARRETT. & DUNNER, L. L. P. 1300 I STREET, N. W. WASHINGTON, DC 20005

202-408-4000

6.S. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

wherein:

- -\p is an integer ranging from 1 to 6,
- D is chosen from direct bonds and –(CH<sub>2</sub>)<sub>r</sub>-CO- groups, wherein r is a number equal to 4 or 7, and
- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids, and
- a second compartment comprises at least one oxidizing agent.

74. (Amended) A method for oxidation dyeing keratin fibers comprising:

(a) applying to said keratin fibers at least one dyeing composition (A) comprising, in a dyeing medium:

- at least one oxidation dye, and

(b) developing the color with the aid of at least one oxidizing composition (B) comprising at least one oxidizing agent, wherein said at least one oxidizing composition (B) is combined at the time of use with said at least one dyeing composition (A) or said at least one oxidizing composition (B) is applied sequentially to said at least one dyeing composition (A) without intermediate rinsing, wherein:

- (I) said at least one dyeing composition (A) comprises:
- at/least one cyclohomopolymer of dialkyldiallylammonium comprising, as a constituent of the chain, at least one unit of structure (VI):

Guls Si

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L. L. P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

o.S. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

(VI) 
$$H_2C$$
  $(CH_2)_k$   $(CH_2)_k$ 

wherein:

- k and t are each chosen from 0 and 1, with the proviso that the sum of k + t is equal to 1;
- R<sub>12</sub>, which may be identical or different, are each chosen from hydrogen atoms and methyl groups;
- R<sub>10</sub> and R<sub>11</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 22 carbon atoms, hydroxyalkyl groups, and C<sub>1</sub>-C<sub>4</sub> amidoalkyl groups;
- R<sub>10</sub> and R<sub>11</sub>, together with the nitrogen atom to which they are commonly bonded, may additionally form at least one neterocyclic group;
- Y is an anion; and wherein:
- (II) said at least one oxidizing composition (B) comprises:
  - at least one quaternary polyammonium polymer chosen from:
    - (i) polymers comprising repeating units of formula (a):

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L. L. P.
1300 I STREET, N. W.

5.S. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

wherein:

- R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 4 carbon atoms and hydroxyalkyl groups comprising from 1 to 4 carbon atoms;
- n and p, which may be identical or different, are each chosen from integers ranging from 2 to 20; and
- X<sup>-</sup> is an anion chosen from anions derived from inorganic acids and anions derived from organic acids; and
- (ii) polyquaternary ammonium polymers comprising repeating units of formula (VIII):

(VIII)

wherein:

- p is an integer ranging from 1 to 6,

FINNEGAN, HENDERSON, FARABOW, CARRETT, & DUNNER, L. L. P. 1300 I STREET, N. W. WASHINGTON, DC 20005 202-408-4000

LAW OFFICES

5.S. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

- D is chosen from direct bonds and  $-(CH_2)_r$ -CO- groups, wherein r is a number equal to 4 or 7, and

- X<sup>-</sup> is an anion chosen from anions derived from inorganic acids and anions derived from organic acids.

77. (Amended)

A method for oxidation dyeing keratin fibers comprising:

(a) applying to said keratin fibers at least one dyeing composition (A) comprising, in a dyeing medium:

- at least one oxidation dye, and

(b) developing the color with the aid of at least one oxidizing composition (B) comprising at least one oxidizing agent, wherein said at least one oxidizing composition (B) is combined at the time of use with said at least one dyeing composition (A) or said at least one oxidizing composition (B) is applied sequentially to said at least one dyeing composition (A) without intermediate rinsing, wherein:

- (I) said at least one oxidizing composition (B) comprises:

- at least one cyclohomopolymer of dialkyldiallylammonium comprising, as a constituent of the chain, at least one unit of structure (VI):

Graps

D8

FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L.L.P. 1300 I STREET, N. W. WASHINGTON, DC 20005 202-408-4000

5.5. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

(VI) 
$$-(CH_2)_t(R_{12})C - (CH_2)_k C(R_{12})(CH_2)- CH_2 Y^{-1}$$

wherein:

- k and t are each chosen from 0 and 1, with the proviso that the sum of k + t is equal to 1:
- R<sub>12</sub>, which may be identical or different, are each chosen from hydrogen atoms and methyl groups;
- R<sub>10</sub> and R<sub>11</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 22 carbon atoms, hydroxyalkyl groups, and C<sub>1</sub>-C<sub>4</sub> amidoalkyl groups;
- R<sub>10</sub> and R<sub>11</sub>, together with the nitrogen atom to which they are commonly bonded, may additionally form at least one heterocyclic group;
- Y is an anion; and wherein.
- (II) said at least one dyeing composition (A) comprises:
  - at least one quaternary polyammonium polymer chosen from:
    - (i) polymers comprising repeating units of formula (a):

FINNEGAN, HENDERSON,

FINNEGAN, HENDERSON FARABOW, GARRETT, & DUNNER, L. L. P. 1300 1 STREET, N. W. WASHINGTON, DC 20005

VASHINGTON, DC 2000 202-408-4000

Attorney Docket No.: 05725.0826-00

wherein:

- R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 4 carbon atoms and hydroxyalkyl groups comprising from 1 to 4 carbon atoms;
- n and p, which may be identical or different, are each chosen from integers ranging from 2 to 20; and
- X<sup>-</sup> is an anion chosen from anions derived from inorganic acids and anions derived from organic acids; and
- (ii) polyquaternary ammonium polymers comprising repeating units of formula (VIII):

wherein:

- p is an integer ranging from 1 to 6,

DE

LAW OFFICES

FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L. L. P. 1300 I STREET, N. W. WASHINGTON, DC 20005 202-408-4000

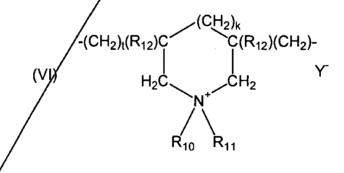
Attorney Docket No.: 09/750,717 Attorney Docket No.: 05725.0826-00

- D is chosen from direct bonds and –(CH<sub>2</sub>)<sub>r</sub>-CO- groups, wherein r is a number equal to 4 or 7, and

- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids.

80. (Amended) A kit for dyeing keratin fibers comprising at least two compartments, wherein:

- a first compartment comprises at least one oxidation dye and
- a second compartment comprises at least one oxidizing agent and a combination comprising:
- (I) at least one cyclohomopolymer of dialkyldiallylammonium comprising, as a constituent of the chain, at least one unit of structure (VI):



wherein:

1;

- k and t are each chosen from 0 and 1, with the proviso that the sum of k + t is equal to



FIEGAN, HENDERSON, RABOW, GARRETT, DUNNER, L. L. P. O I STREET, N. W. WASNOTON, DC 20005 32-408-4000

Attorney Docket No.: 09/750,717

- $R_{12}$ , which may be identical or different are each chosen from hydrogen atoms and methyl groups;
- R<sub>10</sub> and R<sub>11</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 22 carbon atoms, hydroxyalkyl groups, and C<sub>1</sub>-C<sub>4</sub> amidoalkyl groups;
- R<sub>10</sub> and R<sub>11</sub>, together with the nitrogen atom to which they are commonly bonded, may additionally form at least one heterocyclic group;
- Y is an anion; and
  - (II) at least one quaternary polyammonium polymer chosen from:
    - (i) polymers comprising repeating units of formula (a):

wherein:

- R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 4 carbon atoms and hydroxyalkyl groups comprising from 1 to 4 carbon atoms;
- n and p, which may be identical or different, are each chosen from integers ranging from 2 to 20; and

B9.

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L. L. P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

- X<sup>-</sup> is an anion chosen from anions derived from inorganic acids and anions derived from organic acids; and
- (ii) polyquaternary ammonium polymers comprising repeating units of formula (VIII):

$$\begin{bmatrix}
CH_{3} & CH_{3} \\
-N+-(CH_{2})p - N--C-D-N-(CH_{2})p - N+-(CH_{2})_{2}-O-(CH_{2})_{2} \\
-N+-(CH_{3})p - N--C-D-N-(CH_{2})p - N+--(CH_{3})_{2}-O-(CH_{2})_{2}
\end{bmatrix}$$

(VIII)

wherein:

- p is an integer/ranging from 1 to 6,
- D is chosen/from direct bonds and –(CH<sub>2</sub>)<sub>r</sub>-CO- groups, wherein r is a number equal to 4 or 7, and
- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids.

0

FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L.L.P. 1300 I STREET, N. W. WASHINGTON, DC 20005 202-408-4000

83. (Amended) A kit for dyeing keratin fibers comprising at least two compartments, wherein:

- a first compartment comprises at least one oxidation dye and a combination comprising:

O.S. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

(I) at least one cyclohomopolymer of dialkyldiallylammonium comprising, as a constituent of the chain, at least one unit of structure (VI):

$$(CH_2)_t(R_{12})C$$
 $(CH_2)_k$ 
 $(CH_2)_t$ 
 $(CH_2)_t$ 

wherein:

- k and t are each chosen from 0 and 1, with the proviso that the sum of k + t is equal to 1;
- R<sub>12</sub>, which may be identical or different, are each chosen from hydrogen atoms and methyl groups;
- R<sub>10</sub> and R<sub>11</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 22 carbon atoms, hydroxyalkyl groups, and C<sub>1</sub>-C<sub>4</sub> amidoalkyl groups;
- R<sub>10</sub> and R<sub>11</sub>, together with the nitrogen atom to which they are commonly bonded, may additionally form at least one heterocyclic group;
- Y is an anion; and
  - (II) at least one quaternary polyammonlum polymer chosen from:
    - (i) polymers comprising repeating units of formula (a):

010

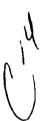
FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L. L. P. 1300 I STREET, N. W. WASHINGTON, DC 20005 202-408-4000

wherein:

- R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 4 carbon atoms and hydroxyalkyl groups comprising from 1 to 4 carbon atoms;
- n and p, which may be identical or different, are each chosen from integers ranging from 2 to 20; and
- X<sup>-</sup> is an anion chosen from anions derived from inorganic acids and anions derived from organic acids; and
- (ii) polyquaternary ammonium polymers comprising repeating units of formula (VIII):

wherein:

- p is an integer ranging from 1 to 6,



DIO

FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L. L. P. 1300 I STREET, N. W.

LAW OFFICES

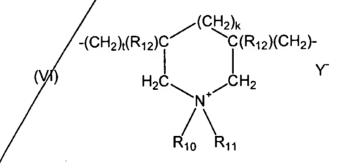
WASHINGTON, DC 20005 202-408-4000

Attorney Docket No.: 09/750,717 Attorney Docket No.: 05725.0826-00

- D is chosen from direct bonds and –(CH<sub>2</sub>)<sub>r</sub>-CO- groups, wherein r is a number equal to 4 or 7, and
- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids, and
- a second compartment comprises at least one oxidizing agent and a combination comprising at least one cyclohomopolymer of dialkyldiallylammonium as defined above and at least one other quaternary polyammonium polymer as defined above.

86. (Amended) A kit for dyeing keratin fibers comprising at least two compartments, wherein:

- a first compartment comprises at least one oxidation dye and at least one cyclohomopolymer of dialkyldiallylammonium comprising, as a constituent of the chain, at least one unit of structure (VI):



wherein:

- k and t are each chosen from 0 and 1, with the proviso that the sum of k + t is equal to 1;

J 10

GNS ()

D11

LAW OFFICES
FINNECAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L. L. P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

- R<sub>12</sub>, which may be identical or different, are each chosen from hydrogen atoms and methyl groups;

- R<sub>10</sub> and R<sub>11</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 22 carbon atoms, hydroxyalkyl groups, and C<sub>1</sub>-C<sub>4</sub> amidoalkyl groups;
- R<sub>10</sub> and R<sub>11</sub>, together with the nitrogen atom to which they are commonly bonded, may additionally form at least one heterocyclic group;
- Y is an anion, and wherein:
- a second compartment comprises at least one oxidizing agent and at least one quaternary polyammorium polymer chosen from:
  - (i) polyments comprising repeating units of formula (a):

wherein:

- R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 4 carbon atoms;
- n and p, which may be identical or different, are each chosen from integers ranging from 2 to 20; and

O

FINNEGAN HENDERSON FARABOW GARRETT& DUNNER LLP

1300 I Street, NW Washington, DC 20005 202.408.4000 Fax 202.408.4400 www.finnegan.com

U.S. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids; and
- (ii) polyquaternary ammonium polymers comprising repeating units of formula (VIII):

wherein:

- p is an integer ranging from 1 to 6,
- D is chosen from direct bonds and –(CH<sub>2</sub>)<sub>r</sub>-CO- groups, wherein r is a number equal to 4 of 7, and
- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids.

89. (Amended) A kit for dyeing keratin fibers comprising at least two compartments, wherein:

- a first compartment comprises at least one oxidation dye and at least one quaternary polyammonium polymer chosen from:
  - $\not\!{\mathbb{N}}$  polymers comprising repeating units of formula (a):

B"

F N ME G A N
HENDER SON
F A DA B O W
G A R R E T T B
D U N I E R L MP
1300 I Street, NW
Washington, DC 20005
202.408.4000

Fax 202.408.4400 www.finnegan.com

wherein:

- R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 4 carbon atoms and hydroxyalkyl groups comprising from 1 to 4 carbon atoms;
- n and p, which may be identical or different, are each chosen from integers ranging from 2 to 20; and
- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids; and

(ii) polyquaternary ammonium polymers comprising repeating units of formula (VIII):

(VIII)

wherein:

- p is an integer ranging\from 1 to 6,

()

D12

FINNEGAN HENDERSON FARABOW GARRETT& DUNNER LLP

1300 1 Street, NW Washington, DC 20005 202.408.4000 Fax 202.408.4400 www.finnegan.com

U.S. Application No.: 09/750,717 Attorney Docket No.: 05725.0826-00

- D is chosen from direct bonds and –(CH<sub>2</sub>)<sub>r</sub>-CO- groups, wherein r is a number equal to 4 or 7, and
- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids, and wherein:
- a second compartment comprises at least one oxidizing agent and at least one cyclohomopolymer of dialkyldiallylammonium comprising, as a constituent of the chain, at least one unit of structure (VI):

(VI) 
$$-(CH_2)_t(R_{12})C - (CH_2)_k - (CH_2)_t(R_{12})C - (CH_2)_t - (CH_2)_t(R_{12})C - (CH_2)_t - (CH_2)_t$$

wherein:

- k and t are each chosen from 0 and 1, with the proviso that the sum of k + t is equal to 1;
- R<sub>12</sub>, which may be identical or different, are each chosen from hydrogen atoms and methyl groups;
- R<sub>10</sub> and R<sub>11</sub>, which may be identical or different, are each chosen from alkyl groups comprising from 1 to 22 carbon atoms, hydroxyalkyl groups, and C<sub>1</sub>-C<sub>4</sub> amidoalkyl groups;

FINNEGAN

**HENDERSON** 

GARRETT&

1300 I Street, NW Washington, DC 20005 202.408.4000 Fax 202.408.4400 www.finnegan.com